Excipients

NISSO HPC

Hydroxypropyl Cellulose

USP/NF, EP, JP • Silica/additive-free

Data Sheet

Nisso HPC Grades

— Available in **Regular** or **Fine Powder Type**

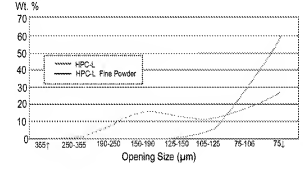
Nisso HPC	SSL	SL	L	M	H
mpa•S @ 20°C / 2% aq	2.0 ~ 2.9	3.0 ~ 5.9	6.0 ~ 10.0	150 ~ 400	1,000 ~ 4,000
Molecular Weight/GPC method	40,000	100,000	140,000	620,000	910,000

Particle Size Distribution

— **Regular** Type: 99% passes through 40 mesh (350 µm)

— **Fine Powder** Type: 99% pass through 100 mesh (150µm)

— **Particle Size Distribution (HPC-L example):**



Solubility

HPC is soluble in water, water-free lower alcohols and polar solvents. Solutions are transparent and have a smooth feel. Solubility in organic solvents is limited only by the viscosity increase. HPC is insoluble in benzene, xylene, carbon tratrachloride and aliphatic hydrocarbons.

— **Amount of HPC (g) that dissolves in 100g of solvent**

Nisso HPC	SSL	SL	L	M	H
Water	70g	50g	40g	20g	10g
Methanol	70	50	40	20	10
Ethanol	70	40	35	20	10
Isopropanol	40	20	15	10	5
Propylene glycol	40	20	10	0.5	0.5
Methylene chloride	30	10	10	7	5

Compendial Status

All grades of Nisso HPC are USP/NF, EP, and JP compliant.

Physical and Chemical Properties

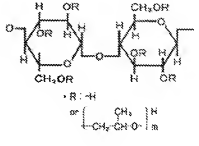
Apparent density (powder)	0.5 – 0.6g/ml
Specific gravity (particles)	1.2224
Coloring temperature	195-210 °C
Charring temperature	260-275° C

Powder Characteristics (HPC-L)

Bulk Density (aerated)	0.38
Bulk Density (packed)	0.48
Compressibility (%)	21.7
Angle of Repose (°)	50.5
Angle of Fall (°)	16.8
Angle of Difference(°)	33.3
Angle of Spatula (°)	63.4
Particle Size (µm)	82.3

Chemical Structure

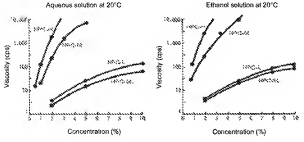
Hydroxypropyl Cellulose
(cellulose, 2-hydroxypropyl ether)



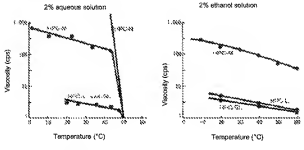
Viscosity Change

Viscosity of HPC in aqueous solution is virtually unchanged in pH range from 1-12. HPC viscosity is also unaffected by UV irradiation. Viscosity change caused by change in HPC concentration or change in temperature are shown in figures below.

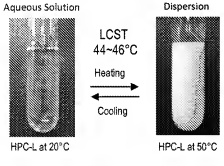
– Viscosity Change vs. Concentration



– Viscosity Change vs. Temperature

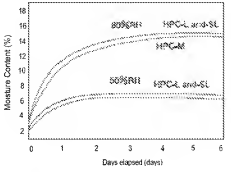


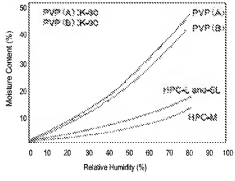
– Gelation effect is completely reversible upon cooling



LCST = Lower Critical Solution Temperature

Moisture Uptake





Additives

Nisso HPC contains no silica or other additives.

Residual Solvents

Nisso HPC meets the requirements for residual solvents as put forth in USP <467>. Please contact us for complete statement.

Expiration

Expiration date is 3 years from date of manufacture.

Packaging

Nisso HPC is packaged in a 10kg box or 70kg double-lined fiber drum.

Site of Manufacture

Nippon Soda Co., Ltd.
Nihongi Plant
Niigata-ken, Japan

Contact Information

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